

About Us

THE ENERGYXCHANGE STORY

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Nestled in the Black Mountains of Western North Carolina, Yancey and Mitchell are two of the state's most rural counties. The area is rich in cultural, natural, and historic assets including the legendary Penland School of Craft, Mayland Community College and Mount Mitchell, the highest peak east of the Mississippi River.



When the landfill that served the residents of the two counties was closed in 1994, extensive research and discussion took place to find a use for the potential energy. Local leaders created and customized appropriate applications and facilities for the reuse of the landfill gases. The two-county area is home to some of America's most creative artists and beautiful native plants. The EnergyXchange site is an ideal location to develop craft incubator studios to support developing artists and greenhouses that cultivate endangered flora while utilizing the landfill gas.

**What is landfill gas?**

As the municipal solid waste decomposes beneath the surface of the Yancey-Mitchell landfill cap, landfill gas is created. Landfill gas consists of about 50% methane, the primary component of natural gas, 50% carbon dioxide, and a small amount of other organic compounds. Ordinarily, without a collection system, the landfill gas moves upward and escapes into the air. The collection and combustion of the landfill gas drastically lowers greenhouse gas emissions. At EnergyXchange, the landfill gas is captured and used as an energy source, thereby reducing local smog and global climate change.

The idea for EnergyXchange was created through the partnership of three organizations—Blue Ridge Resource Conservation and Development Council (BRRC&D), HandMade in America (HandMade), and Mayland Community College (MCC)—all recognized for their strong track records in education, the promotion of crafts, and community and resource development and environmental protection in Western North Carolina. From 1996 until 2000, the partners strategized and worked to develop plans, raise funds and bring the EnergyXchange project to life.

BRRC&D, a local branch of the US Department of Agriculture, began investigating potential uses for landfill gas in 1996. Sponsored by county commissioners, BRRC&D researched other locations harnessing landfill gas. Their research led to a new EPA program called the Landfill Methane Outreach Program (LMOP).

In 1997, MCC began planning "Project Branch Out" to encompass the horticultural work at EnergyXchange. Today MCC provides the EnergyXchange residents with small business education and resource support through its Small Business Center. Its horticulture program is still very active at our site.

Initially, EPA-LMOP conducted a feasibility study on the quality and quantity of methane in the gas being produced by the landfill. Their study determined that the site was commercially viable for energy development.

In 1998, due to the large volume of gas discovered, HandMade joined the partnership to implement the craft business incubators involving clay and glass studios. That same year, the EPA awarded a \$50,000 grant to hire a project manager, and The Community Foundation of Western North Carolina awarded \$10,000 for greenhouse construction. A total of \$1.5M in funding was raised for the construction of the gas collection system and campus construction.

On Earth Day 1999, the landfill gas system was activated.

By 2001, the campus was complete and the first six artists had begun their residencies.

EnergyXchange has become one of the nation's model energy recovery projects and is used regionally, nationally, and internationally as an example of successful small landfill gas projects. The EPA Methane to Markets Program included EnergyXchange in a 2008 landfill gas workshop in Poland and was included on a tour of Western North Carolina by Gov. Beth Perdue and Sen. Joe Sam Queen in the spring of 2010. Also in 2010, delegations from Mexico, Canada, Brazil and India toured EnergyXchange to gain insights into developing similar projects.

Methane gas from the decomposing trash powers a hot shop for glass blowers, a pottery kiln, and supplies radiant heat for the studios, greenhouses, education center, offices and art gallery. The system is expected to save over a \$1 million in energy costs over the landfill's conservatively estimated 20-year reuse cycle; however larger direct burn landfills can produce methane for 40-50 years. Methane, when burned, combines with oxygen to form carbon dioxide. Methane is a greenhouse gas that is 21 times more effective at holding heat in the atmosphere than carbon dioxide. According to the EPA's feasibility study, the environmental impact of the Yancey-Mitchell County landfill Reuse Project is equivalent to planting 14,000 acres of trees or taking 21,000 cars off the road in North Carolina each year!

The nonprofit corporation, EnergyXchange, was formed September 13, 1999 and received its

tax exempt status in 2000. The EnergyXchange complex includes four greenhouses, three cold frames, a retail craft gallery, visitor center, clay studio and glass studio. EnergyXchange is run by a 15-member Board of Directors, comprised of public officials, business and civic leaders, and representatives of the area. The mission of EnergyXchange is to apply the use of renewable resources and practices for educational opportunities and economic development in the fields of art and horticulture. The "three Es" of EnergyXchange's local impact are: Environment, Education, and Economics. The programs that facilitate this local impact are the craft business incubator program, project branch out, and the landfill gas system itself. Many school groups, civic organizations, governmental agencies, and individuals interested in alternate energy come to EnergyXchange for a guided tour. These tours provide information on landfill gas, wind energy, and solar energy, as well as, horticulture and aquaculture.

The The EnergyXchange Craft Incubator program was established to support six talented artists in starting, managing, and operating their own small businesses in the crafts of glass blowing and pottery. The residents have years of experience already devoted to their respective craft. The goal of the program is to help artists at the beginning of their careers further develop both their craft and business skills, leaving EnergyXchange with the 'know how' and experience necessary for success on their own or in other craft studios.

The artists while at EnergyXchange perfect their craft, develop their businesses, and live in our community. The program supports two glass artists and four clay artists. The clay kilns and glass furnaces are fired with landfill gas at no additional cost to the residents. In the creation of their pieces of art, the EnergyXchange artists are also helping the environment and the local economy.

Project Branch Out began with the strategy to nurture small agricultural activities in rural western North Carolina. The Appalachian Mountains offer an unequalled array of native ornamentals. Project Branch Out helps diversify local crops and propagates endangered species. While the area has a rich agricultural history found in burley tobacco, Christmas trees, woody and herbaceous ornamentals, beef cattle and vegetable production, these two counties have experienced declining availability of indigenous plants - such as rhododendron and native azaleas - that are a cash crop for local nurseries and export. At EnergyXchange we grow several varieties of evergreen rhododendrons and deciduous azaleas from seeds that have been collected locally, and sell them in containers to local growers. The best selling and best known native plant grown at EnergyXchange is the Flame Azalea. The quilt block at EnergyXchange is titled "Flower of the Woods" and is meant to depict the range of colors possible in the flower of the Flame.



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